

March 11, 2019
File: PE4194-LET.04

**CHSS International Investments and
Management Inc.**

310-1827 Woodward Drive
Ottawa, Ontario
K2C 0P9

Attention: **Mr. Roberto Campagna**

Subject: **Additional Groundwater Sampling
City File No. D07-12-17-0173 and D02-02-17-0126
Re: Phase II ESA
443 and 447 Kent Street and 423-425 McLeod Street
Ottawa, Ontario**

154 Colonnade Road South
Ottawa, Ontario
Canada, K2E 7J5
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Geotechnical Engineering
Environmental Engineering
Hydrogeology
Geological Engineering
Materials Testing
Building Science
Archaeological Services

www.patersongroup.ca

Dear Sir,

Paterson Group (Paterson) have prepared this letter in response to comments issued by the City of Ottawa (City) with regard to the proposed development of 443 and 447 Kent Street and 423-425 McLeod Street via e-mail on February 21, 2019. Specifically, the comments addressed herein pertain to the outstanding issues related to the Phase II ESA.

- ❑ Groundwater levels at all five monitoring wells were measured on February 21, 2019. Based on the water levels on the subject site it remains the position of Paterson that the groundwater levels in BH4 and BH5 have not stabilized.

Table 1 – Groundwater Levels		
BH ID	Groundwater Level	Date
BH1	3.05	February 22, 2018
	3.99	March 7, 2018
	4.38	November 21, 2018
	4.53	January 14, 2019
	4.57	February 21, 2019
BH2	3.72	February 22, 2018
	4.20	November 21, 2018
	4.03	January 14, 2019
	4.99	February 21, 2019
BH3	8.50	February 22, 2018
	7.01	March 7, 2018
	2.92	November 2, 2018
	3.71	November 21, 2018
	3.58	January 14, 2019
	4.65	February 21, 2019
BH4	5.97	January 14, 2019
	5.67	February 21, 2019
BH5	6.34	January 14, 2019
	6.84	February 21, 2019

Based on all the groundwater levels collected at the subject site since the original Phase II ESA, the deep monitoring wells (BH3, BH4 and BH5) do not stabilize for several months. The groundwater levels from BH4 and BH5 can reasonably be excluded from groundwater flow direction mapping. Based on the groundwater levels from the three stabilized monitoring wells (BH1, BH2 and BH3) the groundwater flow direction is to the west.

- ❑ Groundwater samples from BH3, BH4 and BH5 were analysed for VOC parameters. A duplicate sample and trip blank sample was also included as part of the analysis. No detectable concentrations were identified in BH4, BH5 or the trip blank sample.

Table 2 – VOC Analysis	
Sample ID	Result
BH3-GW	19.7 ug/L – Tetrachloroethylene No other VOC parameters detected
BH4-GW	No VOC parameters detected
BH5-GW	No VOC parameters detected
DUP (Duplicate of BH3)	18.5 ug/L – Tetrachloroethylene No other VOC parameters detected
Trip Blank	No VOC parameters detected.

As discussed with the City, since no VOC's were detected in BH4 and BH5, it was not deemed necessary to retest BH1 and BH2. The marginal tetrachloroethylene exceedances of the MECP Table 3 Fine Grained Standard for the groundwater samples from BH3 (BH3-GW and DUP) are not considered to pose a risk to the subject property. Based on the groundwater testing carried out at the subject site tetrachloroethylene is present in the groundwater at concentrations similar to the MECP Standard beneath the south-eastern part of the property. While the source of the tetrachloroethylene has not been identified the groundwater data indicated a potential offsite source to the east of the land.

While the majority of the property is to be redeveloped, the dwelling on the southern part of the site in the vicinity of the impacted groundwater, will remain. Based on the depth to the water table in this area and relatively low tetrachloroethylene concentrations identified in BH3 during the last 3 sampling events, it is our opinion that the impacted groundwater does not pose a risk to the subject building.

The variance in the samples BH3-GW and DUP, approximately 4% Relative Percentage Difference (RPD) is well within the 20% RPD as required by the Sampling and Analysis Plan are considered to be acceptable.

- ❑ As shown in Table 2 above, duplicate and trip blank samples were analysed as part of the most recent sampling event for the site. As stated above, the variance in the samples from BH3 and DUP is considered to be acceptable. No parameters were detected in the Trip Blank sample. No concerns with respect to the sampling methodology have been identified.

It is recommended that the well in BH3 be maintained throughout the redevelopment of the subject site for potential future groundwater monitoring purposes.

In conclusion, it is our opinion that the impacted groundwater does not pose a risk to the subject property in its current state or to the proposed redevelopment on the northern portion of the subject land. No further work is recommended.

Mr. Roberto Campagna
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We trust this information satisfies your requirements.

Paterson Group Inc.



Michael Beaudoin, P.Eng., QP_{ESA}



Mark S. D'Arcy, P.Eng., QP_{ESA}



Report Distribution:

- ☐ CHSS International Investments and Management Inc.

Attachments:

- ☐ Laboratory Certificates of Analysis
- ☐ Drawing PE4194 – 3 - Test Hole Location Plan

Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Mike Beaudoin

Client PO: 25967
Project: PE4194
Custody: 118607

Report Date: 28-Feb-2019
Order Date: 22-Feb-2019

Order #: 1909046

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1909046-01	BH3-GW
1909046-02	BH4-GW
1909046-03	BH5-GW
1909046-04	Dup
1909046-05	Trip Blank

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25967

Report Date: 28-Feb-2019
Order Date: 22-Feb-2019
Project Description: PE4194

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	27-Feb-19	27-Feb-19

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25967

Report Date: 28-Feb-2019

Order Date: 22-Feb-2019

Project Description: PE4194

Client ID:	BH3-GW	BH4-GW	BH5-GW	Dup
Sample Date:	02/21/2019 09:00	02/21/2019 09:00	02/21/2019 09:00	02/21/2019 09:00
Sample ID:	1909046-01	1909046-02	1909046-03	1909046-04
MDL/Units	Water	Water	Water	Water

Volatiles

Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethane)	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	0.5 ug/L	19.7	<0.5	<0.5	18.5
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 25967

Report Date: 28-Feb-2019

Order Date: 22-Feb-2019

Project Description: PE4194

	Client ID:	BH3-GW	BH4-GW	BH5-GW	Dup
	Sample Date:	02/21/2019 09:00	02/21/2019 09:00	02/21/2019 09:00	02/21/2019 09:00
	Sample ID:	1909046-01	1909046-02	1909046-03	1909046-04
	MDL/Units	Water	Water	Water	Water
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
4-Bromofluorobenzene	Surrogate	118%	124%	112%	104%
Dibromofluoromethane	Surrogate	89.4%	90.2%	89.5%	90.3%
Toluene-d8	Surrogate	97.1%	102%	101%	98.3%

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25967

Report Date: 28-Feb-2019
 Order Date: 22-Feb-2019
 Project Description: PE4194

Client ID:	Trip Blank	-	-	-
Sample Date:	02/20/2019 09:00	-	-	-
Sample ID:	1909046-05	-	-	-
MDL/Units	Water	-	-	-

Volatiles

Acetone	5.0 ug/L	<5.0	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethar	0.2 ug/L	<0.2	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25967
Report Date: 28-Feb-2019
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Project Description: PE4194

	Client ID:	Trip Blank	-	-	-
	Sample Date:	02/20/2019 09:00	-	-	-
	Sample ID:	1909046-05	-	-	-
	MDL/Units	Water	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-
4-Bromofluorobenzene	Surrogate	105%	-	-	-
Dibromofluoromethane	Surrogate	86.7%	-	-	-
Toluene-d8	Surrogate	98.4%	-	-	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25967

Report Date: 28-Feb-2019
 Order Date: 22-Feb-2019
 Project Description: PE4194

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane)	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	93.5		ug/L		117	50-140			
Surrogate: Dibromofluoromethane	74.4		ug/L		93.0	50-140			
Surrogate: Toluene-d8	80.4		ug/L		100	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25967

Report Date: 28-Feb-2019
 Order Date: 22-Feb-2019
 Project Description: PE4194

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane)	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	95.4		ug/L		119	50-140			
Surrogate: Dibromofluoromethane	76.5		ug/L		95.6	50-140			
Surrogate: Toluene-d8	77.8		ug/L		97.2	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25967

Report Date: 28-Feb-2019
 Order Date: 22-Feb-2019
 Project Description: PE4194

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	69.4	5.0	ug/L		69.4	50-140			
Benzene	33.7	0.5	ug/L		84.3	60-130			
Bromodichloromethane	34.8	0.5	ug/L		86.9	60-130			
Bromoform	28.6	0.5	ug/L		71.6	60-130			
Bromomethane	26.3	0.5	ug/L		65.8	50-140			
Carbon Tetrachloride	46.5	0.2	ug/L		116	60-130			
Chlorobenzene	29.0	0.5	ug/L		72.5	60-130			
Chloroform	29.6	0.5	ug/L		74.1	60-130			
Dibromochloromethane	32.0	0.5	ug/L		79.9	60-130			
Dichlorodifluoromethane	40.8	1.0	ug/L		102	50-140			
1,2-Dichlorobenzene	47.7	0.5	ug/L		119	60-130			
1,3-Dichlorobenzene	37.4	0.5	ug/L		93.5	60-130			
1,4-Dichlorobenzene	50.6	0.5	ug/L		126	60-130			
1,1-Dichloroethane	28.7	0.5	ug/L		71.7	60-130			
1,2-Dichloroethane	24.8	0.5	ug/L		62.1	60-130			
1,1-Dichloroethylene	30.2	0.5	ug/L		75.4	60-130			
cis-1,2-Dichloroethylene	29.4	0.5	ug/L		73.6	60-130			
trans-1,2-Dichloroethylene	28.8	0.5	ug/L		72.1	60-130			
1,2-Dichloropropane	32.1	0.5	ug/L		80.2	60-130			
cis-1,3-Dichloropropylene	36.1	0.5	ug/L		90.2	60-130			
trans-1,3-Dichloropropylene	35.0	0.5	ug/L		87.4	60-130			
Ethylbenzene	32.2	0.5	ug/L		80.6	60-130			
Ethylene dibromide (dibromoethane)	36.8	0.2	ug/L		92.0	60-130			
Hexane	38.4	1.0	ug/L		96.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	92.9	5.0	ug/L		92.9	50-140			
Methyl Isobutyl Ketone	68.4	5.0	ug/L		68.4	50-140			
Methyl tert-butyl ether	69.0	2.0	ug/L		69.0	50-140			
Methylene Chloride	30.3	5.0	ug/L		75.8	60-130			
Styrene	31.6	0.5	ug/L		79.0	60-130			
1,1,1,2-Tetrachloroethane	34.6	0.5	ug/L		86.5	60-130			
1,1,2,2-Tetrachloroethane	27.5	0.5	ug/L		68.7	60-130			
Tetrachloroethylene	34.5	0.5	ug/L		86.2	60-130			
Toluene	30.5	0.5	ug/L		76.3	60-130			
1,1,1-Trichloroethane	34.1	0.5	ug/L		85.2	60-130			
1,1,2-Trichloroethane	30.3	0.5	ug/L		75.8	60-130			
Trichloroethylene	32.2	0.5	ug/L		80.4	60-130			
Trichlorofluoromethane	34.1	1.0	ug/L		85.2	60-130			
Vinyl chloride	33.5	0.5	ug/L		83.8	50-140			
m,p-Xylenes	65.1	0.5	ug/L		81.3	60-130			
o-Xylene	33.7	0.5	ug/L		84.3	60-130			
Surrogate: 4-Bromofluorobenzene	98.5		ug/L		123	50-140			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25967

Report Date: 28-Feb-2019
Order Date: 22-Feb-2019
Project Description: PE4194

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Client Name: <u>PATERSON</u>	Project Reference: <u>PE4194</u>	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: _____
Contact Name: <u>MIKE BERNDON</u>	Quote #	
Address: <u>154 Colonnade Rd S.</u>	PO # <u>25967</u>	
Telephone: <u>613-226-7391</u>	Email Address: <u>mberndon@patersons-emp.ca</u>	

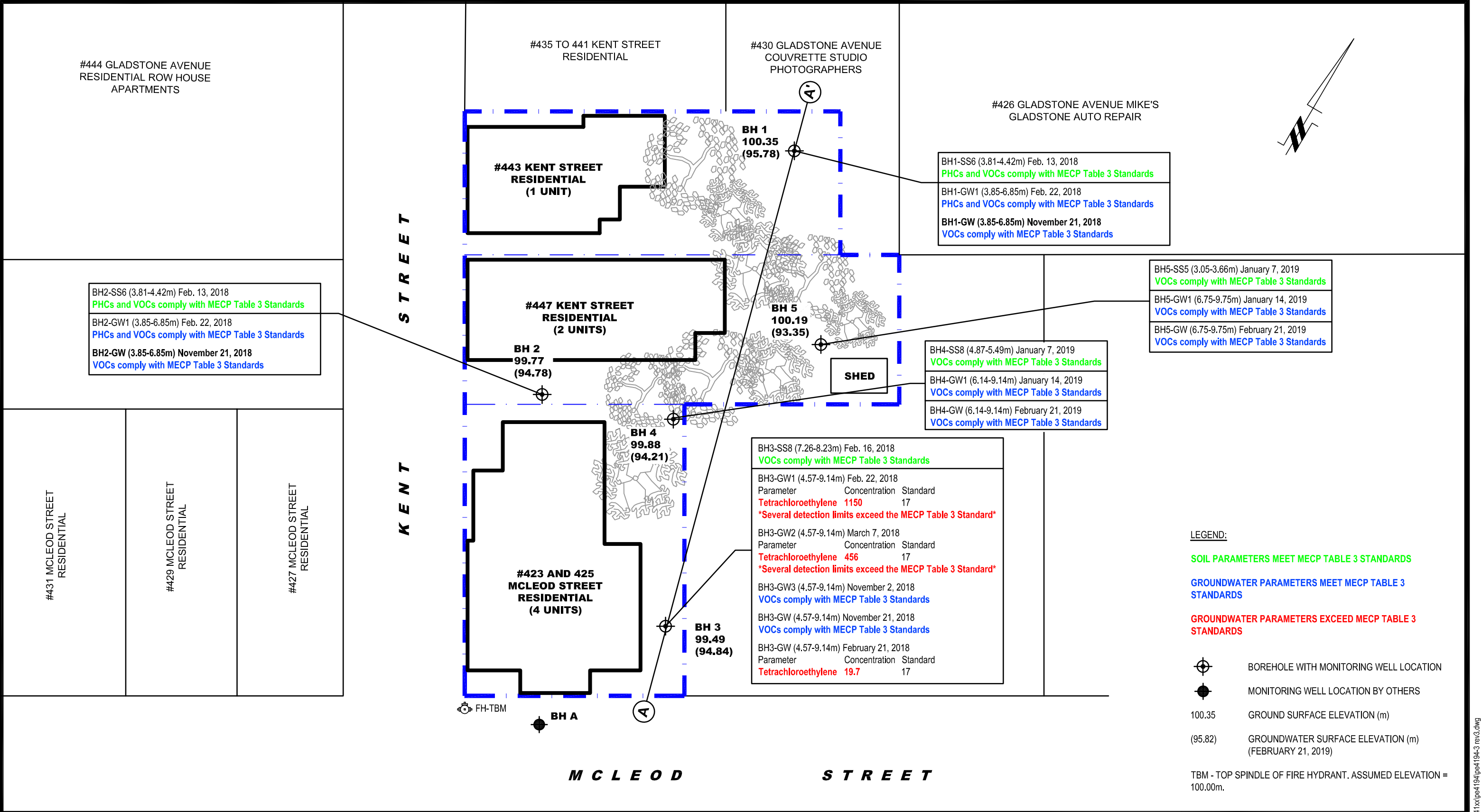
Criteria: ☒ Reg. 153/04 (As Amended) Table ☐ RSC Filing ☐ O. Reg. 558/00 ☐ P.W.O. ☐ GGME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)						Required Analyses																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Parcel Order Number: 1909046						Matrix	Air Volume	# of Containers	Sample Taken		PHCs FI-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

Comments:	Method of Delivery: <u>Paracel</u>
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Relinquished By (Sign): <u>[Signature]</u>	Received by Driver/Depot:	Received at Lab: <u>D. BROWN</u>	Verified by: _____
Relinquished By (Print): <u>MIKE B</u>	Date/Time: _____	Date/Time: <u>FEB 22 19 4PM</u>	Date/Time: _____
Date/Time: _____	Temperature: _____ °C	Temperature: <u>10.9 °C</u>	Altitude (m): _____

D. BROWN
FEB. 25. 119 12



patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

3	ANALYTICAL RESULTS ADDED GROUNDWATER SURFACE ELEVATION UPDATED	06/03/2019	MB
2	BH 4 & BH 5 ADDED: GROUNDWATER SURFACE ELEVATIONS UPDATED	25/01/2019	MB
1	ANALYTICAL RESULTS ADDED	10/12/2018	MB
NO.	REVISIONS	DATE	INITIAL

CHSS INTERNATIONAL INVESTMENTS AND MANAGEMENT INC.	
PHASE II - ENVIRONMENTAL SITE ASSESSMENT	
443 & 447 KENT STREET AND 423 & 425 MCLEOD STREET	
OTTAWA,	ONTARIO
Title: TEST HOLE LOCATION PLAN	

Scale:	1:250	Date:	01/2019
Drawn by:	MPG	Report No.:	PE4194-LET.04
Checked by:	MB	Dwg. No.:	PE4194-3
Approved by:	MSD	Revision No.:	3

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